

Reader: Queering damage: methodologies for partial reparations... or not...

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Human overharvesting of horseshoe crabs, however, has threatened the food supply of these migrating birds. As a result, a multispecies coordination that has taken place over millions of years is suddenly in danger of extinction. Will they leave only ghosts? asks biologist Peter Funch.

How many kinds of time—from *longue durée* evolutionary rapprochements to the quick boom and bust of investment capital—are wrapped up in these encounters? Minor forms of space and time merge with great ones. An extinction is a local event as well as a global one. Extinction is a breakdown of coordinations that has unintended and reverberating effects.

Some earth systems scientists describe the Anthropocene as the “Great Acceleration,” the sharp rise in the destructive environmental effects of human industry since the second half of the twentieth century.³ The massive increase in carbon dioxide, methane, and nitrate emissions into the atmosphere from industrialized agriculture, mineral extraction, petroleum-driven production, and globalized shipping/transportation networks has outpaced all other rhythms of life. Yet the Great Acceleration is best understood through immersion in many small and situated rhythms. Big stories take their form from seemingly minor contingencies, asymmetrical encounters, and moments of indeterminacy. Landscapes show us.

*Imagine walking through Monti Pisani in Italy, where pines and abandoned chestnut orchards mingle. Andrew Mathews offers tactics for noticing **the longue durée** of human disturbance as he shows us **form, texture, color**, a process of **constant speculation** as pattern. Ghosts become tangible through the form of ancient chestnut stools. Centuries of grafting, cultivation, trade, taxation, and disease are inscribed onto their structure and shape. The landscape emerges from ghostly entanglements: the many histories of life and death that have made these trees, this place.*

Extinction Leaves Traces

To track the histories that make multispecies livability possible, it is not enough to watch lively bodies. Instead, we must wander through landscapes, where assemblages of the dead gather together with the living. In their juxtapositions, we see livability anew. Many great animals that roamed the world in the Ice Age, for example, are now extinct. Their traces are still with us. Northern trees that grow back when cut down, such as oaks, may have evolved that ability in times

when elephants trampled them. The ghosts of lost animals haunt these plants, even as the plants live on as our companions in the present.

Giant cave bears, straight-tusked elephants, and spotted hyenas once made their lives in Europe. The ground sloth, the mastodon, the shrub-ox: these were animals of North America. Unprecedented numbers of megafauna species became extinct during the late Quaternary period. Their disappearance from Eurasia, Australia, and the Americas is closely linked to the arrival of modern humans in these continents. As biologist Jens-Christian Svenning argues, their loss is almost certainly anthropogenic.

As humans reshape the landscape, we forget what was there before. Ecologists call this forgetting the “shifting baseline syndrome.” Our newly shaped and ruined landscapes become the new reality. Admiring one landscape and its biological entanglements often entails forgetting many others. Forgetting, in itself, remakes landscapes, as we privilege some assemblages over others. Yet ghosts remind us. Ghosts point to our forgetting, showing us how living landscapes are imbued with earlier tracks and traces.

The native American flowers that are now missing from the Great Meadows of the University of California campus in Santa Cruz are ghosts to ecologist Ingrid Parker. Remembering missing flowers alerts her to the amnesia that distorts our perception of landscapes. Today, the Great Meadows are places of beauty and leisure, protected by law as natural havens. But the meadows are recent products of human disturbance. Almost devoid of the native plants that used to grow there, they are grasslands of colonially introduced species. The lifeworlds of indigenous flowers and the Native Americans that lived with them are specters in these grasslands.

Ghosts remind us that we live in an impossible present—a time of rupture, a world haunted with the threat of extinction. Deep histories tumble in unruly graves that are bulldozed into gardens of Progress. Yet *Arts of Living on a Damaged Planet* is also a book of weeds—the small, partial, and wild stories of more-than-human attempts to stay alive. Ghosts, too, are weeds that whisper tales of the many pasts and yet-to-comes that surround us. Considered through ghosts and weeds, worlds have ended many times before. Endings come with the death of a leaf, the death of a city, the death of a friendship, the death of

small promises and small stories. The landscapes grown from such endings are our disaster as well as our weedy hope.

Modernist Futures Have Made the Anthropocene

Bad deaths generate their own variety of ghosts. Across mainland Southeast Asia, “green” ghosts arise from deaths in war and in childbirth; these deaths occur before their proper time. How much more, then, does the violence of settler colonialism and capitalist expansion give rise to the ghosts of bad death, death out of time? Here is the terrain of what anthropologist Deborah Bird Rose calls “double death,” that is, extinction, which extinguishes times yet to come.

Rose has argued that white Australian settlers brought with them a particular, and peculiar, kind of time.⁴ They looked straight ahead to the *future*, a singular path of optimism and salvation informing their dreams and deeds. This *future* is a characteristic feature of commitments to modernity, that complex of symbolic and material projects for separating “nature” and “culture.” Moving toward this *future* requires ruthless ambition—and the willingness to participate in great projects of destruction while ignoring extinction as collateral damage. The settlers looked straight ahead as they destroyed native peoples and ecologies. The terrain carved out by this *future* is suffused with bad death ghosts.

Aleksandr Kupny grew up in the hopes of this future, and he is not afraid of ghosts. Kate Brown lets him lead us into the sarcophagus of the destroyed Chernobyl reactor, where he delightedly takes pictures of the wreckage. The ghosts are everywhere. “After forty years in radioactive fields, he said, he can sense decaying atoms.” Everyone had warned him that the radioactivity would kill him, but he paid no heed, even after other friends in his community died. “The first few times we went below,” Kupny said, “I recorded my dose and wrote it down, but then Sergei asked me why I did that. ‘What good will it do you to know? The less you know, the better you will sleep.’”

What better figure for the promises of modernity? The less you know, the better you will sleep. Meanwhile, our safety net of multispecies interdependencies tears and breaks.

Unintentional Consequences Hit Us with New Force

Industrial engineering creates many unplanned effects; what promoters intend is rarely realized. Instead of building toward a single future, many kinds of time swirl through the worlds shaped by the modern *anthropos*. These are our ghosts.

Sometimes we can see the ghosts of relentless waste and manufactured poverty in the forms of stinking garbage and leaky sewers. But there are also ghosts we cannot see and those we chose to forget. They don't sit still. They leave traces; they disturb our plans. They crack through pavements. They tell us about stretches of ancient time and contemporary layerings of time, collapsed together in landscapes.

*In 1945, one technology suddenly changed the whole world: the splitting of an atom. The two atomic bombs that destroyed Hiroshima and Nagasaki, respectively, synchronized the world to radioactivity as winds carried radioisotopes around the world. Physicist and philosopher Karen Barad says these acts of war have scarred bodies and landscapes; every radiated cell is now a ghost of war. Technoscientific war changes what we know as matter, and it calls out for new analytic tools that can move us beyond what is big and small, absent or present, inside or outside. For Barad, ghosts are superpositions of past, present, and future. Radioactivity is eerie, a powerful ghost that resets planetary time. Barad invokes quantum field theory to show us haunted landscapes as **strange topologies**: "Every bit of spacetime mattering is . . . entangled inside all others."*

The synchronizations put into motion by contemporary technology—not just radioactivity but also global pollution, the movements of capital, climate change, and many more—look different when assessed from the perspective of planetary damage. They show us ghosts, the multiple stories of landscape effects. Whereas Progress trained us to keep moving forward, to look up to an apex at the end of a horizon, ghosts show us multiple unruly temporalities.

Death may not, after all, be the end of life; after death comes the strange life of ghosts. Hélène Cixous suggests that ghosts are uncanny because they disturb the proper separation between life and death; they mark a "between that is tainted with strangeness."⁵ Such strangeness, the uncanny nature of nature, abounds in the Anthropocene, where life persists in the shadow of mass death.

Ladders Are Not the Only Kind of Time

In Europe, northern Renaissance thinkers came up with a great scheme linking classical, religious, and emergent modern thinking. They claimed that life had evolved from simple to complex. This was a grand and optimistic view that placed humans at the top of the Great Chain of Being, the highest rung of a ladder, where God had once resided. Like the Christian religious thought before it, this scheme assumed that we were all in a single time, on a single trajectory.

The storm of the Anthropocene sweeps us off the ladder into the waves of the more-than-human sea, where biologist Andreas Hejnol shows us tunicates, sponges, and jellies. Terrible and wonderful, we hardly know how to give them names. Take them off the ladder of Progress, Hejnol tells us; let them show us their complex designs. Imagine swimming among them rather than locking them into rungs on a ladder that leads only to ourselves. How many evolutionary gifts do these creatures entangle us in?

Some kinds of lives stretch beyond our ken, and for us, they also offer a ghostly radiance. The lichen that grows on tombstones is one example. Every autumn, mycologist Anne Pringle goes to the Petersham Cemetery near Boston to trace the outline of individual lichens, watching their growth on the gravestones of local residents and dignitaries. They grow slowly, and sometimes some disappear. Some are probably the same individuals as those that first found a place to settle when those dignitaries died centuries ago. For fleeting creatures such as ourselves, lichens are more-than-ghosts of the past and the yet-to-come.

Lichens are symbiotic assemblages of species: filamentous fungi and photosynthetic algae or cyanobacteria. Lichens are themselves a kind of landscape, enlivened by their ghosts. Many filamentous fungi are potentially immortal. This does not mean they cannot be killed; yet, unlike humans, they do not die just from age. Until cut off by injury, they spread in networks of continually renewed filaments. When we notice their tempo, rather than impose ours, they open us to the possibility of a different kind of livability.

Many kinds of time—of bacteria, fungi, algae, humans, and Western colonialism—meet on the gravestones of Petersham. The ghosts of multispecies landscapes disturb our conventional sense of time, where we measure and manage one thing leading to another. Lichens may be alive when we are gone. Lichens are ghosts that haunt us from the

past, but they also peer at us from a future without us. These temporal feats alert us that the time of modernity is not the only kind of time, and that our metronomic synchrony is not the only time that matters.

Noticing Attunes Us to Worlds Otherwise

When nineteenth-century Japanese polymath Minakata Kumagusu campaigned to maintain the local shrines that the Meiji government planned to raze, he did so both as a scientist and as a participant in local forms of knowledge. Local shrines were sites of remnant old forest, and Minakata hoped to preserve their biodiversity, including the slime molds and fungi that were subjects of his research. At the same time, he felt that folk knowledge, including stories of strange beings and eerie shadow biologies, was key to his ability to learn about nature. Rather than dismissing folk knowledge, he incorporated approaches from it into his scientific work. Indeed, while generally unacknowledged, vernacular—and even “spooky”—insights have informed some of the most important science all over the world. This is a reason to learn from ghosts, however unfamiliar their forms. Our experiments combine natural history and vernacular legacies, learning from precedents nourished by other times and places.

*According to the Javanese villagers who befriended anthropologist Nils Bubandt, an ancient spirit snake lives in the geothermal vent of the mud volcano that recently destroyed their homes and livelihoods. The spirit being gives them gifts in the shape of magical stones. While difficult to find and interpret, the stones have the power to change people's luck. So villagers scour the mudflat where their homes used to be, hoping to find the gift of a better fortune in stones. To those who can divine within them the animal forms that hide within, the stones hold the promise of a better life. In a twist of irony, however, these stones are spewed from the volcano that destroyed their lives, a volcano triggered, perhaps, by oil drilling. In this devastated landscape, stones and spirits, petrochemical industry and magic, enliven each other. It is a landscape where nothing is certain. So while villagers blame the oil company for the devastating eruption of mud, geologists argue over the true and proper cause of the eruption: was it natural or anthropogenic? Is the disaster the work of *geos* or *anthropos*? The mud volcano is caught in undecidability. Reading the villagers' search for spirit stones in light of such undecidability urges us to see how spirits also possess geology. In troubled, illegible times, ghosts haunt us in many forms.*

(PDF) *Symbiogenesis: The holobiont as a unit of evolution*. Available from: https://www.researchgate.net/publication/260380101_Symbiogenesis_The_holobiont_as_a_unit_of_evolution [accessed Oct 17 2018].

Margulis, L.

Symbiogenesis is the result of the permanent coexistence of various bionts to form the holobiont (namely, the host and its microbiota). The holobiome is the sum total of the component genomes in a eukaryotic organism; it comprises the genome of an individual member of a given taxon (the host genome) and the microbiome (the genomes of the symbiotic microbiota). The latter is made up of the genes of a variety of microbial communities that persist over time and are not eliminated by natural selection. Therefore, the holobiome can also be considered as the genomic reflection of the complex network of symbiotic interactions that link an individual member of a given taxon with its associated microbiome. Eukaryotic individuals can be analyzed as coevolved, tightly integrated, prokaryotic communities; in this view, natural selection acts on the holobiont as if it were an integrated unit. The best studied holobionts are those that emerged from symbioses involving insects. The presence of symbiotic associations throughout most of the evolutionary history of insects suggests that they were a driving force in the diversification of this group. Support for the evolutionary importance of symbiogenesis comes from the observation that the gradual passage from an ancestral to a descendant species by the accumulation of random mutations has not been demonstrated in the field, nor in the laboratory, nor in the fossil record. Instead, symbiogenesis expands the view of the point-mutation-only as the unique mechanisms of evolution and offers an explanation for the discontinuities in the fossil record ("punctuated equilibrium"). As such, it challenges conventional paradigms in biology.

It's with such profound happiness. Such a hallelujah. Hallelujah, I shout, hallelujah merging with the darkest human howl of the pain of separation but a shout of diabolic joy. Because no one can hold me back now. I can still reason—I studied mathematics, which is the madness of reason—but now I want the plasma—I want to eat straight from the placenta. I am a little scared: scared of surrendering completely because the next instant is the unknown. The next instant, do I make it? or does it make itself? We make it together with our breath. And with the flair of the bullfighter in the ring.

Let me tell you: I'm trying to seize the fourth "dimension of this instant-now so fleeting that it's already gone because it's already become a new instant-now that's also already gone. Every thing has an instant in which it is. I want to grab hold of the is of the thing. These instants passing through the air I breathe: in fireworks they explode silently in space. I want to possess the atoms of time. And to capture the present, forbidden by its very nature: the present slips away and the instant too, I am this very second forever in the now. Only the act of love—the limpid star-like abstraction of feeling—captures the unknown moment, the instant hard as crystal and vibrating in the air and life is this untellable instant, larger than the event itself: during love the impersonal jewel of the moment shines in the air, the strange glory of the body, matter made feeling in the trembling of the instants—and the feeling is both immaterial and so objective that it seems to happen outside your body, sparkling on high, joy, joy is time's material and the essence of the instant. And in the instant is the is of the instant. I want to seize my is. And like a bird I sing hallelujah into the air. And my song belongs to no one. But no passion suffered in pain and love is not followed by a hallelujah.

ontology as it can be understood through Anarchism. We approach even closer to classical Anarchism in following Booth's definition of emancipation as "the freeing of people...from those physical and human constraints which stop them from carrying out what they would freely choose to do".⁹⁹ Divergent from this view, however, is Linklater's vision of emancipation through a transformation of political community. The reinvention of political community is found in the 'moral possibilities' of a 'post-exclusionary state' predicated on the state surrendering a plethora of monopoly powers.¹⁰⁰ However, when contrasted with Anarchist understandings of the State, this approach to emancipation rings of statist and reductionist tendencies towards reformism.

Kropotkin's understanding of biologically-grounded social ontology and the antithetical role of the State to human development can inform Critical IR theory as to where it should place its ontological foundations.¹⁰¹ The adoption of Kropotkin's ontology would help critical theory to overcome the theoretical incoherence of its emancipatory agenda, while also steering it away from these reformist inclinations. Kropotkin's Anarchist ontology presented above is premised on the pre-existence of society before the State. The Anarchist rejection of the State is in response to the perception that the State looms over society—in Kropotkin's words:

The State's functionary took possession of every link of what formerly was an organic whole. Under that fatal policy and the wars it engendered, whole regions, once populous and wealthy, were laid bare; rich cities became insignificant boroughs; the very roads which connected them with other cities became impracticable. Industry, art, and knowledge fell into decay. Political education, science, and law were rendered subservient to the idea of State centralization. It was taught in the Universities and from the pulpit that the institutions in which men formerly used to embody their needs of mutual support could not be tolerated in a properly organized State; that the State alone could represent the bonds of union between its subjects; the federalism and 'particularism' were the enemies of progress, and the State was the only proper initiator of further development.¹⁰²

Kropotkin argued that the development of the state, which arrogated to itself the role of facilitator to cooperation, imposed its own methods of cooperation—regardless of the suitability to circumstances. There was another implication of centralizing cooperative tendencies within the state structure; Kropotkin argues that there grew out of this a dependence on authority. This dependence had the atomizing effect of "the development of an unbridled, narrow-minded individualism".¹⁰³ In sum, the state was a contingent social relation that created boundaries, restrictions, regulations and ideologies antithetical to the preconditions to and conditions of sociality.

The critique of the interpretation of the 'struggle for existence' metaphor offered by Kropotkin's Mutual Aid Theory marks the epistemological point where we are prompted by Critical Realism to explore the metaphor's ontological underpinnings.

⁹⁹ Ken Booth, 'Security and emancipation', *Review of International Studies*, 17, (1991), 319.

¹⁰⁰ Linklater, *The transformation of political community: ethical foundation of the Post-Westphalian era*, 177.

¹⁰¹ Booth, *Critical Security Studies and World Politics*, 181.

¹⁰² Kropotkin, *Mutual Aid: A Factor of Evolution*, 178.

¹⁰³ *Ibid*, 135.

Further, the paramount positioning of sociality within MAT opens the door to the possibility of a holist biological ontology. The meta-theoretical approach to conceive of this holist biological ontology and the transformative potential of the relations which exist within it are highlighted by Critical Realism. Illuminating the contingent nature of these relations within the context of their necessity in a holist ontology underlies the emancipatory impulse of this approach. At the same time, key assumptions in International Relations Theory, such as anarchy and cooperation, take different meanings when reductionism in analysis is challenged by holism. I have argued that this holist ontology can serve as a coherent reference point for the concept of the expansion of political community that Critical IR theory espouses. However, accepting this holist approach also implies accepting Kropotkin's normative argument against the State and its atomizing tendencies. Thus, the challenge of Kropotkin's biological ontology not only manifests itself in its critique of reductionist conventions in political analysis, but also in the praxis of radical anti-state politics. The subversive nature of this challenge is the starting point for what Anarchism has to offer IR.

The Impropriety of Social Amoebae In Box 83, Folder 1625 of the Octavia E. Butler papers, housed at the Huntington Library in San Marino, California, a single note about slime molds surfaces (see opposite). Dated December 31, 1988, the note generally catalogs a number of colony organisms, such as the Portuguese man-o-war and the anglerfish. In multicolored pen on a lined index card, Butler has written: “We find true colony organisms rare and fascinating [sic]. Here they are the exception[.] There, perhaps, the rule.”

What is the “there” to which she refers? Not the soil through which slime molds travel (up to one centimeter per hour!), nor the sea depths where the female anglerfish “might carry more than one male” on her back. It is an elsewhere, a speculative space where someone—in this case, perhaps the most treasured black feminist speculative fiction writer of all time—can begin to imagine an otherwise. If “here” references a world processed through the hegemonic filters of what some may call human civilization, Butler’s “there” gestures toward other worlds: of slime molds and anglerfish, of organisms that belie taxonomic kingdoms, of life-forms and lifeways that elude our current frameworks. This note on slime molds, I contend, documents queer feminist science (fiction) in the making.

On slime molds specifically, Butler’s note focuses on their queerness: Slime molds—much unicellular life behaves this way—which means it isn’t always unicellular. . . . Most slime molds are made of amoeba(like?) parts that feed seperately [sic], then, when food supply is exhausted, they come together, crawl to a suitable place as a multicellular “slug[.]” [T]here it builds a “tower” of its own cells—of itself[—]and a few at the top produce spores which scatter on the wind from the fruiting body <tower>. Is it an agragate [sic]

[sic]—many individuals? Is it a “mating” group? (Butler 1988, emphasis in original)

Essentially an undifferentiated sack of multinucleated protoplasm, the cellular slime mold *Dictyostelium discoideum* has no brain, no central nervous system—and yet, in conditions of scarcity, it will swarm, intelligently reconfiguring itself into multicellular masses, working in tandem temporarily to proliferate, spread, and relocate to more generative sites. The slime mold defies Linnean taxonomization, as it cannot be easily categorized as animal, plant, mineral, or even fungi, leaving contemporary scientists to relegate the hundreds of species of slime molds to kingdom Protista, a kind of catchall kingdom of “others.” Unsettling scientific classification, the slime mold even belies strict adherence to grammatical rules. In writing about slime mold, one can slip between singular and plural forms at every reference with due cause, as both cellular and plasmodial slime molds exist alternately as singular and plural, depending on how and when you’re counting. Wondering whether slime mold is best characterized as an aggregate of individuals, a mating group, a swarm, or a single organism, Butler meets the question of pronouns with an admirable openness, queering and querying the limiting politics of either individualism or collective action. Describing the fruiting body as “a ‘tower’ of its own cells—of itself,” Butler bends grammar to accommodate this alien ontology, asserting the organism’s nonconforming, decentralized organization. Butler’s methods constitute queer science

studies approaches. By fully recognizing the alien possibilities of this life-form—by insisting that not all unicellular life is always unicellular, and by meeting about slime mold, one can slip between singular and plural forms at every reference with due cause, as both cellular and plasmodial slime molds exist alternately as singular and plural, depending on how and when you're counting. Wondering whether slime mold is best characterized as an aggregate of individuals, a mating group, a swarm, or a single organism, Butler meets the question of pronouns with an admirable openness, queering and querying the limiting politics of either individualism or collective action. Describing the fruiting body as “a ‘tower’ of its own cells—of itselfes,” Butler bends grammar to accommodate this alien ontology, asserting the organism's nonconforming, decentralized organization. Butler's methods constitute queer science studies approaches. By fully recognizing the alien possibilities of this life-form—by insisting that not all unicellular life is always unicellular, and by meeting slime mold morphology in between singular and plural in its grammar—Butler demonstrates a remarkable openness to non-normative biological organization. She does not look to figure the slime mold out. She seems excited to follow it off the script of 1980s evolutionary biology to other possibilities. In slime, she looks for a model of life that could be, rather than life that already is. It is a speculative fabulation, drawn from life unruly.

Butler's inquiries into slime molds and what she calls “multi-dividual units” coincide with some of the key questions she raises around human-alien relations as well as nonhierarchical social structures in her three novels *Dawn* (1987), *Adulthood Rites* (1988), and *Imago* (1989), which comprise the so-called Xenogenesis trilogy, collected in 2000 in a single volume titled *Lilith's Brood*. Descriptions of slime mold behavior often focus on its anomalous self-organizing, which requires systemic morphing between single-celled and multicellular forms:

Dictyostylium has the remarkable property of existing alternatively as single cells or as a multicellular organism. As long as there is enough food around, the single cells are self-sufficient, growing and dividing by binary fission. But, when starved, these cells undergo internal changes that lead to their aggregation into clumps which, as they grow bigger, topple over and crawl off as slugs. (Keller 1983, 516)

The transformation of “self-sufficient” cells into aggregated clumps and slugs could well describe the bodies of the Oankali, the alien species depicted in Octavia Butler's Xenogenesis series. The Oankali, who arrive at a postapocalyptic Earth and “save” a small group of humans for the potential of their genetic material, are covered in head and body tentacles that function as sensory organs. In times of stress, they knot up into clumps. One might also recognize slime mold chemotaxis in the walls and floors of the Oankali ship, which Butler describes as a living organism that digests and recycles its inhabitants' waste and communicates with them through biochemical signatures and feedback loops. Indeed, Butler has often fabulated species that embody symbiogenesis, which highlights cooperation rather than competition in describing the organization and evolution of complex life (Ferreira 2010; Vint 2010).

In Butler's fictional world, acclimating to this alien ontology requires an active queering of human sexuality vis-à-vis the third-gender "ooloi" of the Oankali. The ooloi anchor the mating ecologies among male, female, and non-Oankali participants who enjoy the benefits of genetic therapy and chemically stimulated pleasure. Lilith, who joins an Oankali family with an ooloi named Nikanj, helps Nikanj undergo the "internal changes" that humans might associate with puberty. Like a slime mold undergoing its transformation from unicellular to multicellular organism in a time of stress, Nikanj finds temporary relief in foraged food: "It drew its head and body tentacles into knots," Butler writes. "'Give me something else to eat.' [Lilith] gave it a papaya and all the nuts she had brought in. It ate them quickly. 'Better,' it said. 'Eating dulls the feeling sometimes'" (Butler [1987] 1997, 103). In fabricating the Oankali, Butler has drawn much from what could be considered slime mold's queerest properties: nondimorphic sexuality, trans-species chemo-tactile communication, and nonhierarchical sociality. In these ways, slime mold behavior itself speaks to femi-queer notions of collectivity and nonhierarchical social formations. Remarkably, researching slime mold behavior also leads directly to the very heart of feminist science studies in its emergence as a field.

In 1969, feminist physicist Evelyn Fox Keller, along with mathematician Lee Segel, looked to the slime mold as a demonstrable example of spontaneously emergent, self-organizing principles. Their preliminary research, though, was largely abandoned by the scientific brotherhood in favor of the so-called "pacemaker hypothesis," which suggested that a centralized authority, composed of special pacemaker or "founder cells," ordered other cells to aggregate. Despite the complete lack of evidence for the existence of such cells, the pacemaker hypothesis was upheld as conventional scientific knowledge throughout the sixties and seventies. In 1983, though, Keller definitively overturned this hypothesis with the help of developments in mathematical biology, including the study of nonlinear reaction-diffusion equations, which provided a means of understanding the interaction between the production and diffusion of acrasin and cellular chemotaxis. Chemotaxis, Keller revealed, not special founder cells, directs slime mold aggregation and movement. In her article, Keller exposes the extent to which scientists had imposed hierarchical and ultimately patriarchal structures of thinking onto cellular slime mold. To "posit a single central governor," she writes, was to subject scientific inquiry to a "zealous desire for familiar models of explanation, . . . imposing on nature the very stories we like to hear" (1983, 521).

Though many scientists sheepishly admit enjoying science fiction, many often disavow any significant influence cultural texts might have on the work they do in the laboratory, despite the common emphases on speculation and experimentation shared by scientists and science fiction writers alike (Haraway 1991; Milburn 2010; Shaviro 2016; Bahng 2017). Feminist science studies scholar Banu Subramaniam has called for "more engaging plots and stories that are located in the interdisciplinary fissures of the sciences and the humanities" (2014, 72).

At the juncture of science and fiction, Octavia Butler's speculative fabulation instantiates just such an assemblage of transdisciplinary knowledge making. Reading Butler's speculative fiction alongside scientific research on slime molds, one can begin to trace the entangled fictional and nonfictional stories of how human and nonhuman species

organize themselves. One can begin to track the narrativization of human exceptionalism in the conventional story of life itself. And because slime molds lead us away from systems of hierarchical ordering, ordering, the story of how humans have tried to shoehorn slime into a more familiar form reveals how storytellers of science become susceptible to their own frameworks. In other words, while there may very well be a slime mold ontology beyond human understanding, one ethical way to reach across to that speculative reality might be to wonder with it, rather than marvel at it from a distance. In this way, considering Butler's work moves the new materialist conversation from trans-species allyship to multispecies solidarity, and in so doing, advances a feminist queer materialism as threaded through cross-ethnic antiracist work. Such consideration puts Butler's fabulations and Evelyn Fox Keller's research on slime mold aggregation in a more capacious feminist genealogy of nonhierarchical organizing that might include, for example, Jasbir Puar's theorization of political assemblage (2007), or Occupy, or #BlackLivesMatter theories of decentralized and nonhierarchical organizing.

General Ecology

The New Ecological Paradigm

EDITED BY ERICH HÖRL
WITH JAMES BURTON

CHAPTER TWO

Computational logic and ecological rationality

Luciana Parisi

The computational turn in architectural design has led to a new conception of nature, for which the idea of man-made structures has been surpassed by an investment in materially driven ecologies. Computational design is now concerned with the intelligence of materials, their capacity (or potentiality) to self-organize by changing over time. This attention to a bottom up order of becoming aims at “empowering matter in contemporary design”¹ and cannot be understood in isolation from a naturalization of logic, in which computation constitutes the ground of indistinction between technology and matter.

Historically speaking, the development of computational design is associated with the epistemological paradigms of second-order cybernetics and interactive computation.² The last ten years have been characterized by a radicalization of the principles of biophysical self-organization involving a design thinking, which brings together evolutionary biology and non-standard geometry (or topology).³ The use of digital modeling inspired by the Universal Turing Machine involved the manipulation of symbols to test results and deduce proofs for possible structures. In contrast, this neo-materialist approach, I would suggest, relies on inductive methods of reasoning, where data from the biophysical world is algorithmically reactivated to evolve spatio-temporal structures, which are, as it were, empirically derived from matter. This chapter argues that this naturalization of computation is an important instance of the ecological view of power.

Following Brian Massumi’s diagnostic analysis of governance in terms of environmental order, this chapter discusses the advance of an ecological form of rationality (the naturalized logic of affective power), which feeds off its media-technological condition. The turn to computation in design is already part of an ecological rationality of governance defined by the technocapitalization of the indeterminate behavior of materials. The increasing investment in biotechnology, nanotechnology, information technology and cognitive science points to a shift towards a dynamic rather than mechanical instrumentalization of nature. I use ecological rationality to describe the modus operandi of a logic no longer relying on deductive reason. Far from simply imitating the physical properties of matter, this rationality invests in their indeterminacy to generate conditions of affective governance. I suggest that computational materialism in design is the manifest image of a technocapitalist culture turning the mechanization of deductive reasoning into a dynamic logic of computation whose rules are established by the indeterminate potentialities of physical, biological, chemical behaviors and their complex interactions.

However, I propose that this shift implies at least two overlapping tendencies. On the one hand, environmental governance points to the end of a deductive model of rationality surpassed by an inductive—or as Massumi says an “affective” mode of governance (from the model of cognitive mapping to the activities of pre-emptive power). On the other hand, this technological form of governance involves the reduction of media to a meta-computational apparatus of data, algorithms, and programs, defining media as information systems.⁴ Beneath these overlapping levels, however, this chapter argues, there is another, as yet unexplored consequence that concerns the transformation of computational logic and of a mode of reasoning involved in algorithmic processing. In what follows, I will draw on Alfred North Whitehead’s notion of the speculative or metaphysical function of reason to argue that computational logic could instead pose a challenge to the totality of ecological rationality.⁵

This is an attempt to unpack the rupture between computational reason and ecological rationality. My argument about the semi-autonomy of computational reason (as part and parcel of a generic function of reason) derives from a concern with the cogent reality of data architecture and its algorithmic processing, which I argue can hardly be

explained in terms of what is affectively lived, perceived, and thought. I suggest that the critique of ecological rationality embedded in the techno-computational strata cannot only be explained in terms of the affective response reflecting another naturalization of the artificial. If computational design exposes the naturalization of both computation and technomediatic governance, it also allows us to explore the historical configurations of computational logic within the larger scope of a speculative or metaphysical function of reason embedded in the actuality of algorithmic thinking.

The tendency towards the digitalization of nature is not new in design and can be traced back to the use of mathematical formulae and solutions in planning.⁶ However, with the computational turn in design, the use of formulae has been replaced by the processing power of algorithms, their performative elaboration of data exceeding the a priori of axiomatic principles. The computational function of algorithms shows us that the deductive logic of truth and a priori axioms is unable to account for—and to predict—contingent or external factors. The increasing use of large data volumes and distributive interactive systems in design has not only pointed to the limits of deductive logic (the general includes the particular) but also diffused the use of inductive methods of heuristic thinking (starting from the particular and proceeding by trial and error to arrive at the general) in which the realm of physical contingencies and not of mathematical formulae are said to be central to computation. If we read this shift to physicalism in computation as a symptom of a new logic of power, then it becomes evident that, as Massumi clearly argues, the chain of contingencies becomes the driving force for decision-making actions. Inductive reasoning is then complicit with the naturalization of computation and the emergence of an ecological rationality modeled upon the premise of indeterminacy. In particular, as evidenced in computational design, the indeterminacy of matter (and materials) to generate spatiotemporal forms has resulted in yet another idealization of physical structures, patterns, and complex behaviors.

While I suggest that inductive reasoning is central to a notion of computational nature, I also argue that ecological rationality can (and must) be questioned. The computation of matter's indeterminacy could be read as the advance of power's affective intelligence, whose actions, instead of being deduced from truths, are induced from the behavioral patterns of matter directly. This new level of equivalence between affect and reason reveals the paradoxical condition in which the technocapitalization of matter has led computational logic to become one with the physical indeterminacy of nature. This chapter is an attempt at unpacking this seamlessly paradoxical condition by arguing that the deductive limits of computation can rather be understood in terms of a transformation of the function of computational reason. I will discuss the computational mode of reason in terms of what Whitehead calls "non-sensuous" or "conceptual prehension" in so far as the algorithmic elaboration of data, I argue, partakes of a speculative, generic or metaphysical function of reason that moves through but cannot be contained by the biophysical layers of stratification central to ecological rationality. This chapter suggests that algorithmic processing is a form of reason that operates or becomes performative of a data environment through a prehensive synthesis, which mirrors neither the laws of physical nature nor the realm of mathematical order.⁷ In particular, the function of rule-based processing will be discussed in terms of a speculative reason that complicates the model of both deductive and inductive processing of truths, and disentangles naturalized computation from an algorithmic mode of thought. My attempt at halving the unity of computational reason and naturalized technocapitalism is also an effort to re-address the notion of reason in terms of a generic speculative schema—constituted by rules, axioms, procedures—that are neither simply imparted nor proven by the world. Instead, as debates about the limits of the deductive model of computation in information theory suggest, rules can be bent and postulates can be revised, both according to contingencies occurring in data processing, but also because computational processing stretches beyond given facts or data. In the history of information science, it is well known that the question of the incomputable (random or infinite strings of data) came to challenge the dominance of deductive axiomatic truths defining the universal function of finite rules according to a mechanistic view of nature. In the age of the algorithm, however, incomputables are no longer exceptions falling outside the remit of computational logic. On the contrary, the latter has surpassed its own deductive limits, and, contrary to today's claims, it cannot be explained in the biophysical terms of the material world. Instead, and this is my argument, computational reason needs to be investigated according to its internal pragmatism, its own generic performativity (or even evolution) of data through which hypotheses are generated, and initial premises are revised. If computational reason could be defined in terms of its own dynamics, it would be approached in terms of a productive instrumentalization of reason not simply espousing the project of capitalist rationality (both formal

Relationality as self-dispossession

AA: Our conversation on the limits and perils of recognition (you mentioned, for example, post-conflict “truth and reconciliation commissions”) seems to be leading us closer to the fraught question of relational ethics and its reliance on articulations of acknowledgement, witnessing, responsiveness, and responsibility. It seems we have sought thus far to approach dispossession inasmuch as it encompasses ways we are performatively constituted and de-constituted by and through our relations to the others among whom we live, as well as by and through particular regulatory norms that secure cultural intelligibility. So dispossession implies our relationality and binding to others – in all its subtleties of anguish and excitement – but also our structural dependence on social norms that we neither choose nor control. Dispossession entails the different and differential manner in which the anxieties and the excitements of relationality are socially distributed.

Taking cue from your interest in Levinas’s idea that we are impinged upon by otherness, I wonder whether

we could think dispossession and self-dispossession through each other. Being dispossessed by the other (in other words, being disposed to be undone in relation to others) is simultaneously a source of anxiety and a chance “to be moved” – to be affected and to be prompted to act – isn’t it? The subject’s “passionate attachment” to regulatory and productive power is linked to the displacement of the self-sufficient “I” as a form of possession. Significantly, you have traced in the very process of giving an account of one’s self, precisely at moments of unknowingness, an affirmative dimension, namely the potentiality of self-poietics – that is, the narration of the self, which assumes the norm and at the same time potentially deconstructs it. In this context, Judith, you have conversed with Levinas and Laplanche especially regarding the way in which they both conceptualize the primacy of the other as a traumatic event that precedes the constitution of the subject. The convergence between the two probably stops there, and I am not sure whether your perspective is closer to Levinas than to Laplanche. You seem to disagree with Levinas’s conceptualization of the address to the other as accusative/accusatory, and your own perspective is probably in tension with the Levinasian assertion of universal responsibility. Also, you seem to be radicalizing a Levinasian ethics in insisting that the ethical encounter is organized in and by the normative violence that reduces certain forms of life to the domain of unintelligible, unspeakable, and unlivable. According to your work, human subjects are not only susceptible to and related to other human subjects, as in the Hegelian intersubjective subject, but also susceptible to and related to regimes of power that regulate

intersubjectivity, defining what renders a subject legible, recognizable, desirable.

In this context, I am haunted by the question of how we can be moved *to* the other and *by* the other (as well as the other's life-world) beyond the logic of "proprietaryness" – with all its undertones of property, priority, and propriety – when the other is constituted as ultimately disposable and transposable by forms and norms of governance. Further, does the ability to recognize or acknowledge self-dispossession necessarily lead to halting the violences of dispossession?

JB: My first response is that one can recognize all kinds of dimensions about one's own self-dispossession even at the moment that one is subjugated by violence, so I am not sure that "knowing" is a sufficient weapon against destruction by violent means. But my wager is that you are thinking about knowing practices, or ways of recognizing self-dispossession, that are materialized in forms of conduct and action.

AA: Yes, I am thinking about knowing practices and practices of acknowledging epistemic limits in their relation to non-knowing. I am also thinking that one should be attentive to the different ways in which unknowingness is deployed, as well as when and by whom.

JB: For me, the insight into interdependency, exposure, precarity, functions as a condition for thinking about ways of countering violent suppression and occupation. It is one condition among many, and in no way a sufficient one. But it has its moment of necessity, and it

may be that, as theorists, we contribute to the articulation of such moments.

I am not sure where I stand between Levinas and Laplanche. I brought them together (against their will) only to point out that for Levinas, in a primary way, we are impinged upon by otherness, and that this defines us as receptive and relational from the start. Laplanche talks about impingement as the way of thinking about a general theory of seduction, offering an original contribution to psychoanalytic theory of this kind. For Laplanche, the very activation of the drives depends upon being affected from the start by those whose touch and sounds produce the first and overwhelming instances of an ambient human world. Levinas talks about “persecution” as the primary relation to the other, and this usually alarms relational psychoanalysts, and understandably so. But what he means by this is that we are not given any choice at the beginning about what will impress itself upon us, or about how that impression will be registered and translated. These are domains of radical impressionability and receptivity that are prior to all choice and deliberation. And they are not just characteristic of infancy or other primary philosophical forms of experience. They recur throughout life as part of a not fully articulate sensibility. But perhaps most importantly, this sensibility is neither mine nor yours. It is not a possession, but a way of being comported toward another, already in the hands of the other, and so a mode of dispossession. To refer to “sensibility” in this sense is to refer to a constitutive relation to a sensuous outside, one without which none of us can survive.

Although Levinas would not be interested in contingent social norms, he nevertheless gives us a way of

The Mushroom at the End of the World On the Possibility of Life in Capitalist Ruins
ANNA LOWENHAUPT TSING
3 Some Problems with Scale

No, no, you are not thinking; you are just being logical. —
Physicist Niels Bohr defending “spooky action at a distance”

TO LISTEN TO AND TELL A RUSH OF STORIES IS A method. And why not make the strong claim and call it a science, an addition to knowledge? Its research object is contaminated diversity; its unit of analysis is the indeterminate encounter. To learn anything we must revitalize arts of noticing and include ethnography and natural history. But we have a problem with scale. A rush of stories cannot be neatly summed up. Its scales do not nest neatly; they draw attention to interrupting geographies and tempos. These interruptions elicit more stories. This is the rush of stories’ power as a science. Yet it is just these interruptions that step out of the bounds of most modern science, which demands the possibility for infinite expansion without changing the research framework. Arts of noticing are considered archaic because they are unable to “scale up” in this way. The ability to make one’s research framework apply to greater scales, without changing the research questions, has become a hallmark of modern knowledge. To have any hope of thinking with mushrooms, we must get outside this expectation. In this spirit, I lead a foray into mushroom forests as “anti-plantations.” The expectation of scaling up is not limited to science. Progress itself has often been derailed by its ability to make projects expand without changing their framing assumptions. This quality is “scalability.” The term is a bit confusing, because it could be interpreted to mean “able to be discussed in terms of scale.” Both scalable and non-scalable projects, however, can be discussed in relation to scale. When Fernand Braudel explained history’s “long durée” or Niels Bohr showed us the quantum atom, these were not projects of scalability, although they each revolutionized thinking about scale. Scalability, in contrast, is the ability of a project to change scales smoothly without any change in project frames. A scalable business, for example, does not change its organization as it expands. This is possible only if business relations are not transformative, changing the business as new relations are added. Similarly, a scalable research project admits only data that already fit the research frame. Scalability requires that project elements be oblivious to the indeterminacies of encounter; that’s how they allow smooth expansion. Thus, too, scalability banishes meaningful diversity, that is, diversity that might change things. Scalability is not an ordinary feature of nature. Making projects scalable takes a lot of work. Even after that work, there will still be interactions between scalable and non-scalable project elements. Yet, despite the contributions of thinkers such as Braudel and Bohr, the connection between scaling up and the advancement of humanity has been so strong that scalable elements receive the lion’s share of attention. The non-scalable becomes an impediment. It is time to turn attention to the non-scalable, not only as objects for description but also as incitements to theory. A theory of non-scalability might begin in the work it takes to create scalability—and the messes it makes. One vantage point might be that early and influential icon for this work: the European colonial plantation. In their sixteenth- and seventeenth-century sugarcane plantations in Brazil, for example, Portuguese planters stumbled on a formula for smooth expansion. They crafted self-contained, interchangeable project elements, as follows: exterminate local people and plants; prepare now-empty, unclaimed land; and bring in exotic and

isolated labor and crops for production. This landscape model of scalability became an inspiration for later industrialization and modernization. The sharp contrast between this model and the matsutake forests that form the subject of this book is a useful platform from which to build a critical distance from scalability. 1 Consider the elements of the Portuguese sugarcane plantation in colonial Brazil. First, the cane, as Portuguese knew it: Sugarcane was planted by sticking a cane in the ground and waiting for it to sprout. All the plants were clones, and Europeans had no knowledge of how to breed this New Guinea cultigen. The interchangeability of planting stock, undisturbed by reproduction, was a characteristic of European cane. Carried to the New World, it had few interspecies relations. As plants go, it was comparatively self-contained, oblivious to encounter. Second, cane labor: Portuguese cane-growing came together with their newly gained power to extract enslaved people from Africa. As cane workers in the New World, enslaved Africans had great advantages from growers' perspectives: they had no local social relations and thus no established routes for escape. Like the cane itself, which had no history of either companion species or disease relations in the New World, they were isolated. They were on their way to becoming self-contained, and thus standardizable as abstract labor. Plantations were organized to further alienation for better control. Once central milling operations were started, all operations had to run on the time frame of the mill. Workers had to cut cane as fast as they could, and with full attention, just to avoid injury. Under these conditions, workers did, indeed, become self-contained and interchangeable units. Already considered commodities, they were given jobs made interchangeable by the regularity and coordinated timing engineered into the cane. Interchangeability in relation to the project frame, for both human work and plant commodities, emerged in these historical experiments. It was a success: Great profits were made in Europe, and most Europeans were too far away to see the effects. The project was, for the first time, scalable—or, more accurately, seemingly scalable. 2 Sugarcane plantations expanded and spread across the warm regions of the world. Their contingent components—cloned planting stock, coerced labor, conquered and thus open land—showed how alienation, interchangeability, and expansion could lead to unprecedented profits. This formula shaped the dreams we have come to call progress and modernity. As Sidney Mintz has argued, sugarcane plantations were the model for factories during industrialization; factories built plantation-style alienation into their plans. 3 The success of expansion through scalability shaped capitalist modernization. By envisioning more and more of the world through the lens of the plantation, investors devised all kinds of new commodities. Eventually, they posited that everything on earth—and beyond—might be scalable, and thus exchangeable at market values. This was utilitarianism, which eventually congealed as modern economics and contributed to forging more scalability—or at least its appearance. Contrast the matsutake forest: unlike sugarcane clones, matsutake make it evident that they cannot live without transformative relations with other species. Matsutake mushrooms are the fruiting bodies of an underground fungus associated with certain forest trees. The fungus gets its carbohydrates from mutualistic relations with the roots of its host trees, for whom it also forages. Matsutake make it possible for host trees to live in poor soils, without fertile humus. In turn, they are nourished by the trees. This transformative mutualism has made it impossible for humans to cultivate matsutake. Japanese research institutions have thrown millions of yen into making matsutake cultivation possible, but so far without success. Matsutake resist the conditions of the plantation. They require the

dynamic multispecies diversity of the forest—with its contaminating relationality. 4 Furthermore, matsutake foragers are far from the disciplined, interchangeable laborers of the cane fields. Without disciplined alienation, no scalable corporations form in the forest. In the U.S. Pacific Northwest, foragers flock to the forest following “mushroom fever.” They are independent, finding their way without formal employment. Yet it would be a mistake to see matsutake commerce as a primitive survival; this is the misapprehension of progress blinders. Matsutake commerce does not occur in some imagined time before scalability. It is dependent on scalability—in ruins. Many pickers in Oregon are displaced from industrial economies, and the forest itself is the remains of scalability work.

(...)

The main distinguishing feature between scalable and nonscalable projects is not ethical conduct but rather that the latter are more diverse because they are not geared up for expansion. Nonscalable projects can be terrible or benign; they run the range. New eruptions of nonscalability do not mean that scalability has disappeared. In an era of neoliberal restructuring, scalability is increasingly reduced to a technical problem rather than a popular mobilization in which citizens, governments, and corporations should work together. . Production does not have to be scalable as long as elites are able to regularize their account books. Can we keep sight of the continuing hegemony of scalability projects while immersing ourselves in the forms and tactics of precarity?

In this “salvage” capitalism, supply chains organize the translation process in which wildly diverse forms of work and nature are made commensurate—for capital.

The contaminated diversity of ecological relations takes center stage. But first, a foray into indeterminacy: the central feature of the assemblages I follow. So far, I’ve defined assemblages in relation to their negative features: their elements are contaminated and thus unstable; they refuse to scale up smoothly. Yet assemblages are defined by the strength of what they gather as much as their always-possible dissipation. They make history. This combination of inefability and presence is evident in smell: another gift of the mushroom.

Add to Basket

Browse eggs. Click on egg.

Add to basket.

Buy One Egg Get One Free.

Add to basket.

Buy Five More Eggs to Qualify
for Free Delivery.

Add to basket.

Other Recommended Eggs Based on Your Browsing History.

Add to basket.

Customers Who Bought This Egg Also Bought These Eggs.

Add to basket.

Here are Some Other Eggs You Might Like to Consider.

Add to basket.

What Other Eggs Do Customers Buy After Viewing This Egg?

Add to basket.

Avoid Putting All Your Eggs in One Basket
with our New Range of Baskets.

Browse baskets. Click on basket.

Add to basket.

Buy One Basket Get One Free.

Add to basket ...

Brian Bilston

5

Microontologies of Sex

Not that it really matters whether or not he [sic] ever knows about the vast populations of inorganic life, the 'thousand tiny sexes' which are coursing through his veins with a promiscuity of which he cannot conceive. He's the one who misses out. Fails to adapt. Can't see the point of his sexuality. Those who believe in their own organic integrity are all too human for the future [to come].¹

Barnacle sex

In *The Origin of Species*, Darwin urged scientists to 'study the oddities of nature'. Perhaps Darwin had in mind *Anelasma ibla* or any other of the sub-class of cirripeds he studied in his exhaustive attempt to understand the structures and processes of nature. Darwin's 'barnacle work' took years to accomplish, involved international correspondence with scientists and naturalists, and the dissection of hundreds of specimens.

I am instructed by Elizabeth Wilson's fine analysis of Darwin's research on barnacles.² Through dissection, Darwin discovered that most species of barnacles are what we would now term intersex: each barnacle has both female and male organs. Other barnacles first appeared to be sex dimorphic, but closer inspection led to an interesting discovery. What Darwin initially discarded as tiny barnacle-infesting parasites actually turned out to be male barnacles. Completely different in bodily shape and microscopically small, the male barnacles live, embedded, inside the body of the female. This is not 'simply' the case of one sex living inside the other; *multiple* (sometimes thousands) of males live inside single females. So barnacles can be intersex but they can also be something else – something we do not yet have a common term for.

Wilson points out that ‘these females and hermaphrodites with many husbands are not simply the intermediary stages in the evolution of barnacle form; they are also evidence of the somatic diversity that nature produces’ (284).

From a human perspective, barnacle sex and reproduction seem peculiar indeed. A perusal of the social scientific literature suggests that gender, sex, reproduction, replication, sexual difference and mixis are defined from an entirely ‘big like us’ vantage point. What might we learn from thinking about sex, reproduction, sexuality and sexual difference as the majority of the earth’s biota practice these processes? Sharon Kinsman presciently asks:

Because most of us are not familiar with the species, and with the diverse patterns of DNA mixing and reproduction they embody, our struggles to understand humans (and especially human dilemmas about ‘sex’, ‘gender’ and ‘sexual orientation’) are impoverished... Shouldn’t a fish whose gonads can be first male, then female, help us to determine what constitutes ‘male’ and ‘female’? Should an aphid fundatrix (‘stem mother’) inform our ideas about ‘mother’? There on the rose bush, she neatly copies herself, depositing minuscule, sap-siphoning, genetically identical daughters. Aphids might lead us to ask not ‘why do they clone?’ but ‘why don’t we?’ Shouldn’t the long-term female homosexual pair bonding in certain species of gulls help define our views of successful parenting, and help [us] reflect on the intersection of social norms and biology?³

The variety of animal, plant, fungal and protoctist sex and reproduction that Kinsman refers to is diverse indeed: slime molds can produce more than 500 different kinds of sex cells; the average male blanket octopus is 2.5 centimeters long compared with his 1.8 meter and 40,000 times heavier female mate; green spoon worm larva become female in the absence of other female spoon worms; male angler fish attach to female bodies where they degenerate until their death; male seahorses fertilize eggs inside their bodies where they are gestated until birth; gray whale mating rituals involve two males and one female; mangrove fish have ovo-testes and fertilize themselves; male slipper limpets become female as they mature; star-shaped sea squirts meet on the ocean floor and send cells (including DNA) to each other through the blood supply they come to share; some kinds of whiptail lizards are all female, hatching unfertilized eggs that produce more females; female bronze-winged jacanas mate with up to four males and the males

build nests, incubate the eggs and feed the chicks when they hatch; male sticklebacks also care for their fertilized eggs and offspring until they are independent; male Darwin frogs keep their tadpoles inside their vocal sacs until they develop into froglets; naked mole rat daughters help their queen mother stay infertile by smearing her with their urine; a hatchling turtle's sex depends on its temperature while it was in the egg; and leopard slugs are intergender (female and male) but fertilize each other's eggs.⁴

With Kinsman, I want to attend to the diversity of sex, gender, reproduction, sexuality and sexual difference within the kingdoms Animalia, Plantae, Fungi and Protocista. But I also want to appreciate these issues from the perspective of Monera, a vast assemblage of organisms rarely included in discussions of the evolution and current practices of sex. We know especially little about bacterial sex and reproduction: yet within Monera, diversity meets its biological and human imaginative limits.

Post-mature discoveries and evolutionary theory's problem

The kind of generation of offspring with which humans are most familiar, mixis, has been studied since the end of the nineteenth century, by botanists studying plant fertilization and zoologists studying the fertilization of eggs with sperm. For Zuckerman and Lederberg, humans' discovery of bacterial sex was 'post-mature'. Scientists were surprised that it was not discovered earlier since: (1) the techniques used were available; (2) it was understandable at the time; and (3) its implications must have been capable of having been appreciated.⁵ That discoveries can be post-mature necessarily speaks of the context of assumptions, beliefs and values in which the questions answered by the discovery are not viewed as important or relevant. 'Why', ask Zuckerman and Lederberg, 'was recombination in bacteria not perceived as a problem before 1946?'⁶ Part of the answer lies in the fact that bacteria were first assumed to be tiny primitive plants: Ferdinand Cohen called them *Schizomycetes* or 'fission fungi'. Humans also find bacteria to be difficult experimental subjects: we might say, after Haraway, that the laboratory is not a setting within which we 'meet well' with bacteria. Observations of bacteria require humans to adopt the prosthetic aid of a microscope, and bacteria act differently in laboratory conditions than elsewhere: they are different actants in relation to the microscope, as Latour might say. Additionally, humans have traditionally conceived of bacteria as pathogens, of little interest and importance otherwise. Thus, it was not until March 1946 that Tatum and Lederberg observed sex in *E. coli*.

Denise Ferreira da Silva
In the Raw

01/09

e-flux journal #93 — september 2018 Denise Ferreira da Silva
In the Raw

What is it that a black feminist poethics makes available? What can it offer to the task of unthinking the world, of releasing it from the grips of the abstract forms of modern representation and the violent juridic and economic architectures they support? If it is a practice of imaging and thinking (with/in/for) the world, without separability, determinacy, and sequentiality, then it approaches reflection as a kind of study, or as the play of the imagination without the constraints of the understanding. And, if the task is unthinking this world with a view to its end – that is, decolonization, or the return of the total value expropriated from conquered lands and enslaved bodies – the practice would not aim at providing answers but, instead, would involve raising questions that both expose and undermine the Kantian forms of the subject, that is, the implicit and explicit positions of enunciation – in particular, the loci of decision or judgement or determination – this subject occupies.

With the following black feminist reading of Madiha Sikander's *Majmua*, I intend a theoretical proposition that focuses on its matter without endowing the *material* with the attributes associated with other causes, such as *finality* or *efficacy*. This poethical reading approaches the artwork, *Majmua*, as a composition, the components of which also include, for instance, the artist's intention, but are not determined by it. For what the reading does is to move to consider whether, and if so, how the components of the artwork, approached *in the raw* – that is, as matter contemplated both as actual and virtual – signal a path for a kind of reflection that avoids the colonial and racial presuppositions inherent to concepts and formulations presupposed in existing strategies for critical commentary on art. Let me say it in another way. Finding refusal (to signify in spacetime) in the matter of the work and not in the forms in the artist's mind, through a poethical (material and decompositional) rather than critical (formal and analytical) reading of the work, this text does no more than to experiment with an approach to artistic practice that seeks to expand its relevance beyond the bounds of criticality – as set up in the Kantian grammar, that is, the dead-ended formalism it has gifted to the critical traditions it has inspired – and considers artistic practice as a generative locus for engaging in radical reflection on modalities of racial (symbolic) and colonial (juridic) subjugation operating in full force in the global present.

I.

A black feminist poethics attends to matter in the raw, that is, as that which has been appropriated (extracted, violated) but not fully obliterated by

the practices and discourses that describe what happens and what exists as determined by form (as abstraction) or law (efficacy), something akin to Hortense Spillers's flesh.¹ In the raw, The Thing, as a referent of undeterminacy (& – &) or materia prima, hails blackness's capacity to release the imagination from the grips of the subject and its forms, which is but a first gesture in regard to a mode of thinking that contemplates virtuality and actuality all and at once.²

What I do in this piece is to experiment with a black feminist poethical reading of an artwork. More precisely, I trace the steps towards a reflective practice that does not, for instance, approach a given artwork as a particular to be subsumed under a, even if subjective, (formal) principle organizing a common (universal) sense. This procedure, as I have offered before, is similar to focusing blacklight.³ Blacklight, or ultraviolet radiation, works *through* that which it makes shine: for example, it has the capacity to transform at the DNA level, that is, it reprograms the code in the living thing exposed to it, and causes mayhem in their self-reproductive capacity at the cellular level. We could think of this process as one of breaking up a modern substance, that is, of separating form (the code, the formula, the algorithm, or the principle) and matter (content, or that of which something is composed). (I use the modifier “modern” because of my interest in dissolving the abstract forms of the understanding. However, there is nothing to prevent us from imaging blacklight breaking through any other abstract or sensible form, even, hopefully, at the atomic level. In any event.)

Once released by blacklight, the matter becomes available for something that can be termed a recoding – which in the case of cells usually means deadly ungoverned reproduction of cells – or to compositional practices that do not hold that which they combine prisoner to the form (figure or shape) with which it apprehends it, such as for instance a tarot spread. In other words, matter becomes available to poethical readings, to the kind of re/de/compositions that do not deploy the onto-epistemological pillars of modern thought, namely separability, determinacy, and sequentiality. To make it possible, at least two intentional steps must precede the reading. First, it is important to avoid presupposing the modern re-arrangement of classical causes – namely, final, formal, efficient, and material – in which the material (that out of which something is made) is but an effect of the end (final), the abstract formula (formal), or the universal law (efficient) that is transparent to none but the subject. Second, while not ignoring that it belongs in this world, a reflection on the material cannot merely move to

treat it as content. For even Adorno's proposition of the artwork as “sedimented” content relies on the very distinction between the empirical and the aesthetic which presumes the empirical as the site of intervention of the understanding – which refers to the position of the subject as the giver or knower of universal laws, in the register of efficacy.⁴ This is crucial because this assumption has consequences for contemporary artworks, which were not even on the radar in the late nineteenth and early twentieth century when, for instance, Gauguin and Picasso, borrowing the “form” of the anthropological “primitive” subject, would demarcate their “genius.”

When attending to the work – the creation or the product – black feminist poethics' first step is to identify and dissolve the workings of separability in the delimitation of the position of the transparent subject. This decompositional step consists primarily in exposing and setting aside the fashionings of the Kantian grammar. In particular, it targets the (explicit or implicit) linking of art and its particular mode of expression to an ideal of humanity. Doing so, it indicates why perspectives such as Rancière's aesthetic regime, which relies on a notion of equality, the emergence of which he locates in the late eighteenth century along with that of Kant's ideal of humanity, offer no entry point for a reflection on artwork that is not immediately taken as an expression of it.⁵ Simultaneously, decomposition, the breaking of the code, also targets later, nineteenth-century refashionings of the Human, that is, the analytics of raciality and its tools (racial difference and cultural difference), the social-scientific reconstructions of Kant's and Hegel's programs, which have embodied and emplaced humanity. In sum, a black feminist poethical reading reflects on the artwork in relation to the arsenal of raciality at the very same time that it also considers how the artwork refuses to simply become an object of empirical anthropology.

II.

Attending to the matter of the artwork, a black feminist poethical commentary moves to release it from the realm of the subject, whose faculty of aesthetic judgement rests on a figuring of the sensible (and the conditions of affectability) mediated by the forms of transcendental reason and a view of the imagination that articulates it as always already in the service of the abstract forms of the understanding.

In the empty gallery, *Majmua* stood as an aggregate of things *known* but unusually combined: clove and beads joined by monofilament in the form of tiny lozenges and larger rectangular stripes. None of its

components afforded a *proper* position for knowing; that is, there was no common “cultural” ground for my familiarity with the form and matter of artwork. The inspiration, Madiha Sikander told me later, came from observing First Nations weavers with the late indigenous (Kwakwaka’wakw) artist Beau Dick while he was in residence at the Department of Art History, Visual Art, and Theory at the University of British Columbia, and from the practice of miniature painting, in which she was trained in Pakistan. Both of which account for her use of beads and cloves, respectively, but not for why I was (pleasantly) surprised to see these familiar materials in her artwork.

How to account for a feeling of pleasure mediated by the knowability of the materials? The “how” of this mediation, I hope, will become evident soon. Let me first comment on two possible ways through which *Majmua* could have appeared “unmediately” familiar (*known*) to me. Both ascribe “immediacy” (familiarity, at the level of cognition) to the subject, but toward distinct formulations of its position. On the one hand, pleasure resulting from *knowing* its components (cloves and beads as matter) would not immediately imply the Kantian aesthetic subject. For knowability in the Kantian formulation of the aesthetic register refers to the transparent I, as a formal entity, the one whose relation to the world – both sensible and intelligible – is mediated, but by forms (intuitions and categories) of the mode of cognition grounded on transcendental reason. Put differently, his account of aesthetic judgement is supported by the assumption that the forms of the object (of art or nature) are compatible (“harmonious” is the term he uses) with the conditions of the subject of determinative (sensitivity in the register of the understanding) and aesthetic (sensitivity in the moment of imagination) judgements, without a recourse to an empirical (scientific) or practical (moral) ground.⁶ Put differently, Kant’s feeling of the beautiful educes a position of enunciation captured by his notion of “subjective universality,” which, in the case of the aesthetic appreciation of artwork but also of nature, presupposes separability, that is, a delineation of the distinct cognitive faculties of the imagination and its intuitions and of the understanding and its concepts.⁷ Here the transparent I, when judging an artwork beautiful, presumes that it enjoys universality and necessity not because it has reference to a concept but to a feeling (of the beautiful) which is presumed (“as if it were”) universal, because it is grounded on common sense (or the assumption that every human being shares in the cognitive structures and their capacities).⁸ As

such, the feeling of the beautiful is not an effect (or rather affect) of matter (of the object) on the subject but rather of its form (formal intuitions of space and time), which is always already in the subject, since he alone is able to reflect, that is, to consider a representation without referring back to its object, but only to his cognitive faculties (imagination and understanding).

On the other hand, however, the knowability of (familiarity with) the components (cloves and beads) of the work does not escape determinacy. Because in the case of *Majmua*, while reflection remains the play of the imagination and the understanding, the latter has supremacy, for it is always already under capture as ethnographic specimen. This is an immediate consequence of its commentary on Pakistani miniature painting and Coast Salish First Nations weaving practices, which very quickly and effectively prompts the position of the subject of empirical anthropology. In this case, knowability could refer to the position of the appreciator of global contemporary art. However, while the appreciator may occupy the position of transparency, the artist (as well as the forms and the matter of the work) would occupy the position of enunciation of the subject as an affectable I, that is, the racial/global subaltern produced by the tools of raciality (racial and cultural difference). Or, put differently, the artist occupies the position of enunciation Spivak calls the “native-informant,” either in finding in the work a form (social? cultural?) that augments the knowledge of human diversity, or attributing to it the purposeless purpose of expressing other dimensions of what is unified under the idea of the human.⁹ Either way, the artwork becomes a postcolonial object which refers to an ethical relation (an immediacy figured by the presupposition of shared humanity in its diversity) that the artwork itself enables, but only because it is mediated by the tools of the understanding before which the postcolonial subject of artistic production is affectable (as an anthropological object) and the postcolonial subject of aesthetic judgement remains transparent by proxy (as the subject of anthropological knowledge).

When considered in the critical-Kantian framework, in regard to the reflective judgement of the beautiful, *Majmua* exposes something else that is also operational if it is taken as a postcolonial piece, which immediately confines it to being an object of determinative judgement. For while philosophy’s (Kant’s) New Hollander has no appreciation for the sublime (as Spivak notices¹⁰), the analytics of raciality’s Australian aboriginal – much like Kant’s “Negro” – has no appreciation of the beautiful because its “normal idea” of the human does not correspond to the

06/09

e-flux journal #93 — september 2018 Denise Ferreira da Silva
In the Raw

“ideal of humanity” that these analytics would later find actualized exclusively by European bodily and social forms.¹¹ This is not Spivak’s “cultural difference,” which she in fact finds foreclosed in Kant’s writings on the sublime.

Recall that, for Kant, the “man in the raw” – under Spivak named, that is, the New Hollander and the man from Tierra del Fuego – provides no basis for considering the figure, Humanity, that organizes his formulation of aesthetic judgement.¹² It was not until the early twentieth century, after the analytics of raciality – through the notion of cultural difference – wrote the “other of Europe,” that these men in the raw could be written as variants of the Human. When they enter the aesthetic register, they do so as products of Kantian tools of the understanding, in two key moments of the analytics of raciality: 1) they are constructed as specific kinds of human beings – subjects of “primitive” or “traditional” cultures – but 2) also as affectable subjects, those whose minds have no access to Reason, which is the cognitive capacity necessary for entertaining the idea of a moral law and the attendant conception of Freedom. For the affectable subject (of cultural difference) – the racial/global subaltern – is marked precisely by its lack of the minimum requirements for the judgement of taste, which is the rational core of Kant’s “ideal of humanity.”¹³ The affectable subject is also marked by its lack of a conception of a *forma finalis*, an idea that underscores Kant’s account of taste and its attribution of a formal purposiveness to the object. The concept of a *forma finalis* is a reference to the subject’s own cognitive capacities, in particular its ability to approach the complexity of the world by reducing the purpose of the latter (which it can never know) to an order (that it alone can understand).¹⁴

Fortunately, however, precisely because of its inability to be taken as a formal-practical aesthetic object, *Majmua* exposes the limits of Kant’s formulation of affectability rooted in (as well as his arresting of the imagination by) an account of the judgement of taste that rests on the transcendental (formal) principle of finality and prefigures efficacy and necessity (that is, the basis of ordering accessible to the understanding).

III.

A black feminist poethical reading deploys blacklight to dissolve determinacy, which grounds the Kantian rendering of aesthetic judgement, shifting the focus to the elusive, the unclear, the uncertain – the scent – thereby making it possible to dislodge sequentiality and expose the deeper (virtual) correspondences comprehended

(but not extinguished) by the abstract forms of modern thought.

At first sight *Majmua* appeared tall, wide, and continuous, though after a few seconds it broke horizontally into smaller brown bands, separated by green strips. A closer look found these brown bands separated by very small red strips, and an even closer look revealed the small lozenges. By then, however, something else had arrested my attention: a known, familiar scent that I could not immediately name. It took a still closer look for me to notice that the lozenges were made of clove sticks. Shapes and colors lost my interest then. Every component of the work would be familiar to most viewers, yet also not, because each component originated from a different faraway place. Each of the components – but in particular the beads and the cloves – have been present in South Asia and South America for such a long time that no one even considers the question of where exactly they are from and how they came to be part of our environment.

Talking with Madiha Sikander about her piece and her training in miniature painting made me think about the need to recall that “form” has at least two meanings – the Aristotelian form as figure (shape or composition) and the Kantian form (as formula or principle). One important aspect of her training in miniature painting in Pakistan, said Sikander, is that students are told to practice until the skill becomes instinct. I am sure that this forgetting plays a part in *Majmua*, as the name (“assemblage”) explicitly indicates. What interests me is what happens when the artist is trained to surrender, to forget, and to yield to all that is involved in the artwork, from materials to conditions. Forgetting a skill because it has become an “instinct” obviously has several consequences for the artist and her work. In *Majmua* we see that forgetting carries a radical potential for artwork as practice, object, and commentary on the global present. What’s so compelling about forgetting, about surrendering the artist’s intentions to the needs of the work? It leads to a loosening of the composition and its materials, which invites them to signify willy-nilly. Each and every decision she has made due to familiarity (but also perhaps to efficiency, curiosity, availability, precarity, abundance, or even patriarchy) with the forms and materials used in the work loses its immediate efficacy in the assemblage. Each piece composing *Majmua* – the cloves, the beads, the monofilament – refigures how current global geopolitical and economic lines have been designed by layers of trade, vanquished imperial powers, and the juridic-economic subject they created. Each lozenge refigures how the lines of the Silk Road and the routes of the Spice Trade

07/09

e-flux journal #93 — september 2018 Denise Ferreira da Silva
In the Raw

map the Indian subcontinent, trade routes tracing to the Neolithic and extending to Southern Europe, North and East Africa, Southeast Asia, Central Asia, and East Asia. Each bead recalls the European expropriation of indigenous lands in the Americas and of human beings in the African continent – the “slave trade beads” Europeans used in their dealings with indigenous American groups. Each material component recalls errant and unbounded and deep temporality. The figural time of matter dissolves historical time’s (abstract) closures, thereby exposing the otherwise invisible and yet-so-familiar colonial links that cross oceans and continents. The matter used in *Majmua* raise questions about what happens to the artist’s intention when attending to materials that have become familiar. We forget that they are both iterations of something that has always existed through the depths of spacetime and beyond, and always already commodities, as items of trade and products of labor.

IV.

What blacklight makes available, what it offers to the task of thinking and unthinking the world, is the possibility of considering thinking in some other way: What if what matters in (the) artwork exceeds representation not because of its “why” or “when” or “where” but because of its “how” and its “what”?

By reading the artwork as composition, reflection can attend to its components as raw material. It can also uncover how the artwork’s knowability (to both the artist and appreciator) results from the way this raw material allows for the *traversing* of spacetime¹⁵ – like Dana, the main character in Octavia Butler’s *Kindred* – and the exposure of how the current map of globality (the ontological horizon delimited by raciality) figures all and at once merchant, industrial, and financial capital. Reading the artwork this way corrupts the fixity imposed by concepts and formulations that inform (the abstract forms of) critical commentary. Let me say it another way. By attending to *Majmua*’s cloves and slave beads, it is possible to read, through *raw material*, the colonial as a moment of the creation of capital. It shows that commodities, such as cotton in the colonial past (and copper in its global present), are not a specimen of other (alien or old) social relations or modes of production – which capital must subsume, articulate, or replace. Since the early sixteenth century, when Portuguese merchants began trading in the Indian and Pacific Oceans, commodities (slaves, cloves, cotton) extracted from various colonial sites have been transiting between Europe and its colonies due to the operation of the modern juridic devices of

coloniality.

When blacklight hits the artwork, its *materia prima* (raw material) shines. As such, this method for reflection and thinking is *critical* only to the extent that it acknowledges, *and* seeks not to remain within, the bounds of the world as imaged for the subject. What happens is that attention goes to what in the artwork resists the reductive apprehensions of critical discourses – their request for a subject – and insists on signifying *in the raw*. With this I am not extending the thesis of the autonomy of art to include the matter of the artwork, but rather inviting a certain kind of reflection that unfolds outside the realm of the subject. Put differently, I attend to the artwork as a poethical piece, as a composition which is always already a recomposition and a decomposition of prior and posterior compositions. By doing so, then, I propose that the artwork does not have to come before the appreciator as an “object,” with all the presuppositions and implications this entails. For the object (of science, of discourse, or of art) is nothing more than a concoction of the onto-epistemological pillars of universal reason that support the modes of operation of the subject, in the moments of appreciation, production, and actualization. Extricated from the subject, reflection on the artwork releases the imagination from the grid of signification sustained by separability, determinacy, sequentiality – a crucial step in the dissolution of the mode of knowing that supports state-capital, that is, that grounds an image of the world as that which needs to be conquered (occupied, dominated, seized).

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All images courtesy of Madiha Sikander.

08/09

e-flux journal #93 — september 2018 Denise Ferreira da Silva
In the Raw

And here we see the connection between geontopower, the governance of difference and markets, and the figure of the Animist. In Australia, at least, Indigenous groups gain rights to fixed compensations through participating in land-claim hearings, during which they testified that they believe that specific features of the landscape such as Old Man Rock and Two Women Sitting Down are sentient, and equally important, that, as the human descendants of these still sentient sites, they are obligated to act on this belief.¹³ A fierce insistence that rocks listen creates an enjoyable kind of difference because it does not (or did not) unsettle the belief of those assessing these claims, and the majority settler public listening in, that rocks cannot perceive or intend or aim; that they are nonlife (*geos*), not life (*zoe* or *bios*). The rights that Indigenous groups receive from the state are not the right to make their view the norm but to attach a small spigot in the larger pipeline of late liberal approaches to geontology. Thus, unsurprisingly, the nearly ten years between the Kenbi Land Claim and the suit against OM Manganese have seen little containment of mining in Australia.¹⁴ It has merely been “rationalized.”¹⁵ All of which takes us back to the sovereign people to whom Gillard referred.

The sovereign people of geontopower are those who abide by the fundamental separation of Life and Nonlife with all the subsequent implications of this separation on intentionality, vulnerability, and ethical implication. That is, what is sovereign is the division of Life and Nonlife as the fundamental ground of the governance of difference and markets. Where Indigenous people agree to participate as an Animist voice in the governmental order of the people they are included as part of this sovereign people. Where they do not, they are cast out. But what of Two Women Sitting Down? Does *it* have standing before the public, law, and market as a political subject? Are the subjects of politics now not merely humans and other forms of living labor and capital—corporations, miners, politicians, and Indigenous custodians, protected plant and animal species—but also the undead and never-have-lived? Is it possible to assert that Two Women Sitting Down and other existents like her should matter equally to or as much or more than a form of human existence? Or, riffing on Fredric Jameson, is it easier to think of the end of capitalism than the intentional subjectivity of Two Women Sitting Down and Old Man Rock?¹⁶ If not, on what basis do we allow or deny geological formations like Two Women Sitting Down an equal standing before the law? Is the manganese blood

of Two Women Sitting Down as ethically burdened as the vital power of the human worker who extracts it? Doesn't the ability of these miners to decompose Two Women Sitting Down show its vulnerability and precarity? Is it more important to keep Two Women Sitting Down in place than to support the lifestyle and well-being that most Australians have come to expect? And what about Indigenous people who wish to put their children through private school and look at sites like Two Women Sitting Down as potential capital with which to do so? From what, or whose, perspective should the answers to these questions be posed and answered—cultural, economic, ecological, literary?

The fight over the meaning and significance of the damaging of Two Women Sitting Down provides a perfect example of why a growing number of geologists and climate experts are urgently calling for new dialogues among the natural sciences, the social sciences, the philosophies, and humanities and the arts. The governance of Life and Nonlife is no longer, we hear, merely a matter of human differences nor of the difference between humans and nonhuman animals, but is now also a matter of the entire assemblage of Life and Nonlife. If we are to answer these questions, and by answering them, alter the coming crisis of an overtaxed and overburdened planet, we are told that we need to reopen channels of communication across the natural sciences and critical humanities and social sciences. This multidisciplinary perspective is crucial for making sense of the standing that places like Two Women Sitting Down and Old Man Rock should have in the contemporary governance of difference and markets in late liberalism. Indeed, a new interdisciplinary literacy is the only hope for finding a way to square our current arrangement of life with the continuation of human and planetary life as such. Scientists, philosophers, anthropologists, politicians, political theories, historians, writers, and artists must gather their wisdom, develop a level of mutual literacy, and cross-pollinate their severed lineages. The pressing nature of such discussions is glimpsed in the shadow cast by dinosaur-sized mining trucks carving away at the foundation of the Bandicoot and Rat. In the massive twilight of these gigantic earthmovers it is hard not to be seduced by the figure of the Desert, not to imagine that the Anthropocene, the geological age of the Human Being, will be the last age of humans and the first stage of Earth becoming Mars, a planet once awash in life, but now a dead orb hanging in the night sky. By squaring the difference between the natural sciences and the critical humanities and social

sciences we might be able to decide whether it makes sense to say that OM Manganese murdered Two Women Sitting Down—or that “the site” was (merely) desecrated. In other words, honest, considered, but hard-hitting interdisciplinary reflection is the only way we will find the right foundation for a decision about whether it is appropriate to say that such and such happened to Two Women Sitting Down—and whether we should refer to it as “that,” “it,” or “they” (a demonstrative, a third nonperson, or two subjects).

But what if we looked at this conversation between the natural sciences and critical humanities and social sciences differently? What if we asked not what epistemological differences have emerged over the years as the natural sciences of life and the critical sciences have separated and specialized, but what common frameworks, or *attitudes, anxieties, and desires*, toward the lively and the inert have been preserved across this separation and specialization? What unacknowledged agreements were signed long before the natural and critical sciences parted ways? In subsequent chapters I look at how the analytics of existence of my Indigenous colleagues are apprehended across specific theoretical, social, and capital environments. Here I begin by outlining the key features of the propositional hinge that joins the natural and critical sciences and that creates the differences between them. I call this hinge the Carbon Imaginary. The Carbon Imaginary is the homologous space created when the concepts of birth, growth-reproduction, and death are laminated onto the concepts of event, *conatus/affectus*, and finitude. As I noted in the introductory chapter of this book, the Carbon Imaginary is the central imaginary of the figure of the Desert. It seeks, iterates, and dramatizes the gap between Life and that which is conceived as before or without Life. And, while certainly central to the Desert, the Carbon Imaginary informs far broader conceptual and pragmatic attempts to overcome it—such as the Animist extension of vitalisms across all existents and assemblages.

I am clearly adapting the concept of a “propositional hinge” from Ludwig Wittgenstein, who argued that propositional hinges function as axles around which an entire apparatus of practical and propositional knowledge about the world turns rather than a set of propositions about the state of the world.¹⁷ Put another way, propositional hinges aren’t truth statements. They are nonpropositional propositions, a kind of statement that cannot be seriously doubted, or, if doubted, the doubt indicates the speaker is or

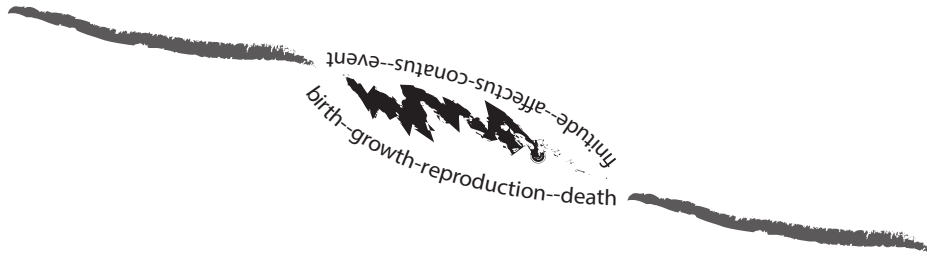



FIGURE 2.1 · A scarred homology.

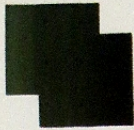
is doing something other than making a truth statement—she is being provocative or is a lunatic or expressing her cultural difference. For Wittgenstein one either remains within the axial environment of a hinged world or one converts to another. In the kind of conversion Wittgenstein proposes one is not merely repositioned in the space established by an axial proposition but moves out of one space and into another, from one kind of physics into another, from one metaphysics into another.¹⁸ But, hinge and axle rod also seem, as metaphors, too smooth an imaginary joint. The image of the scar would probably be a better image of the homologous productivity of the space between natural life and critical life and the nature of the Carbon Imaginary.¹⁹ The Carbon Imaginary would then be the pulsing scarred region between Life and Nonlife—an ache that makes us pay attention to a scar that has, for a long time, remained numb and dormant, which does not mean unfelt.

Natural Life


The distinction between Life and Nonlife is, of course, foundational to the separation of the geosciences and the biosciences, geochemistry and biochemistry, geology and biology. This distinction is based on a series of evolving technical experiments and mediated by highly specialized vocabularies. For instance, a standard contemporary biochemical definition of life is “a physical compartmentation from the environment and self-organization of self-contained redox reactions.”²⁰ Redox is shorthand for a series of reduction-oxidation reactions in which electrons are transferred between chemical species. For those not conversant in contemporary chemistry, oxidation occurs when an element loses one or more oxygen electrons; re-

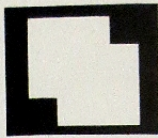
Existing logic gates

OR 




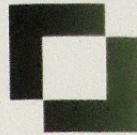
Only if both inputs are 0 is the output 0.

NOR 




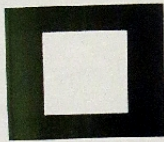
Only if both inputs are 0 is the output 1.

XOR 



Only if one of the inputs (but not both) is 1, the output is 1. Otherwise, the output is 0.

NOT 



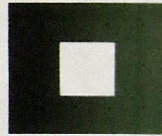
If the input is 1, the output is 0. If the input is 0, the output is 1.

AND 




Only if both inputs are 1 is the output 1. Otherwise, the output is 0.

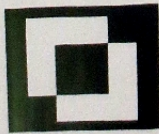
NAND 




Only if both inputs are 1 is the output 0. Otherwise, the output is 1.

Proposed additional logic gate

XNOR 



Only if both inputs are the same (two 0s or two 1s) is the output 1.

BUT 

Stops the functioning of the circuit and raises a concern.

From Return to anarchism with -8- a necessary addition to the system of binary logic gates, from ginger-stems at genderbending to it re-appearance in discussions at Califo.

What Is an Angel?

In *Feeling Backward*, I have argued that “feeling bad” has been a crucial element of modern queer experience but that it has not been adequately addressed in histories of queer representation or in writing about queer politics. For some critics, however, work in queer studies has been too focused on bad feelings and negativity in recent years. In her recent work Elizabeth Freeman argues that the turn to suffering in queer studies has made it impossible to imagine a politics of pleasure:

So far, a simultaneously psychoanalytic and historicist loss—perhaps replacing or subsuming structuralist lack—has emerged as one of fin de siècle queer theory’s key terms . . . I would like to suggest, however, that this powerful turn toward loss—toward failure, shame, negativity, grief, and other structures of feeling historical—may also be a premature turn away from a seemingly obsolete politics of pleasure that could, in fact, be renewed by attention to temporal difference. This is, melancholic queer theory may acquiesce to the idea that pain—either a pain we do feel or a pain we should feel but cannot, or a pain we must laboriously rework into pleasure if we are to have any pleasure at all—is the proper ticket into historical consciousness.¹⁴

For Freeman, feeling pain about gay and lesbian history is an unwanted duty, a responsible activity that blocks access to the real pleasures that feeling (up) the historical record can afford. She suggests that with a shift of focus “we might imagine ourselves haunted by ecstasy and not just by loss; residues of positive affect (erotic scenes, utopias, memories of touch) might be available for queer counter- (or para-) historiographies” (66).¹⁵ Freeman is undoubtedly right to suggest that the queer historical record is chock full of untapped pleasures. It is also the case that bad feelings have a certain prestige within academic discourse both because of their seriousness and also because of their relation to long philosophical traditions of negativity (“lack” becomes “loss”). Yet her suggestion that melancholic queer theory “acquiesces, however subtly, to a Protestant ethic in which pleasure cannot be the grounds of anything productive at all” (59) does not account for the stigmatized and unproductive forms of queer suffering that this book, at least, takes as its subject. Many of the bad feelings under review here—self-pity, despair, depression, loneliness, remorse—are in fact bound up with pleasure, with precisely the sort of pleasure that gets regularly excoriated as sentimental, maudlin, nostalgic, self-indulgent, and useless. I would suggest that part of the reason that these feeling-states continue to be denigrated is that they are associated with pleasures—even ecstasies—so internal that they distract attention from the external world. While melancholia or the sense of failure may borrow some prestige from philosophical accounts of negativity, when it comes to enlisting feelings for queer political projects, these ones are picked last.¹⁶ The main problem with such feelings is that they are not good for action—they would seem to disqualify the person who feels them from agency or activity in any traditional sense. Judith Halberstam has recently made an argument on behalf of negative feelings that are closely tied to action. In a forum on “The Antisocial Thesis in Queer Theory” published in *PMLA* and in her ongoing work on failure, Halberstam details the affective archive of what she sees as a “truly political negativity, one that promises . . . to fail, to make a mess, to fuck shit up.”¹⁷ Drawing on Cvetkovich’s *An Archive of Feelings* and responding to Lee Edelman’s *No Future*, Halberstam proposes an archive of negative political feelings that includes “rage, rudeness, anger, spite, impatience, intensity, mania, sincerity, earnestness, overinvestment, incivility, and brutal honesty” as well as “dyke anger, anticolonial despair, racial rage, counterhegemonic violence, [and] punk pugilism” (824).

While there is no doubt that these underappreciated feelings have their place in political life, and that unruly behavior has been at the heart of many breaks in the social fabric, I have been interested in Feeling Backward in forms of failure that are less closely tied to action. While feeling bad can result in acting out, being fucked up can also make even the apparently simple act of “fucking shit up” seem out of reach.

In this same forum, Lee Edelman offers a critique of Halberstam’s article that suggests that she misunderstands negativity, seeing it not as an antagonism internal to the social order itself but as a positive aspect of social life. He writes, “Affirming . . . as a positive good, ‘punk pugilism’ and its gestural repertoire, Halberstam strikes the pose of negativity while evacuating its force.”¹⁸ Although the conflict that emerges between Edelman and Halberstam might be understood as a product of unreconcilable methodological differences—and an attendant disagreement about the constitution of the social—they do have something important in common: they share a commitment to a notion of negativity that is equated with destructive force. Edelman ups the ante in his conclusion when he introduces a hammer into the fistfight: the “spurious apostles of negativity hammer new idols out of their good, while the aim of queer negativity is rather to hammer them into the dust. In the process, though, it must not make the swing of the hammer an end in itself but face up to political antagonism with the negativity of critical thought” (822).

Although I agree with Edelman that making the “swing of the hammer” the sine qua non of political negativity is not a good idea, I do not think that is because the concepts of “gestural repertoire” and “stance” are not important for political life. In fact, it is the question of the recognized or allowed styles of political subjectivity that has concerned me throughout this book. This debate argues eloquently for the need for an expanded gestural repertoire.¹⁹ I am interested in feelings at some distance from those identified by Philip Fisher as the “vehement passions,” feelings on the model of anger and wonder that indicate “an aroused and dynamic spirit.”²⁰ It is the lack of vehemence and lack of dynamism that make the backward feelings I survey here difficult to imagine as political. They make clear the need to imagine and work toward an alternative form of politics that would make space for various forms of ruined subjectivity: Walter Pater’s shrinking refusal of the “gift” of public homosexual identity; Willa Cather’s melancholic identification with impossible or lost forms of community, and her antagonism toward the future; the “spoiled identity” and loneliness of Radclyffe Hall’s Stephen Gordon; and Sylvia Townsend Warner’s grief-stricken revolutionary activism. These accounts are almost unrecognizable as versions of political subjectivity. Although we may have become attuned over the past several years to forms of radical politics that are not celebratory, we still have not yet begun to imagine a politics that allows for damage. Given the scene of destruction at our backs, queers feel compelled to keep moving on toward a brighter future. At the same time, the history of queer experience has made this resolute orientation toward the future difficult to sustain. Queers are intimately familiar with the costs of being queer—that, as much as anything, makes us queer.

Given this state of affairs, the question really is not whether feelings such as grief, regret, and despair have a place in transformative politics: it would in fact be impossible to imagine transformative politics without these feelings. Nor is the question how to cultivate hope in the face of despair, since such calls tend to demand the replacement of despair with hope. Rather, the question that faces us is how to make a future backward enough that even the most reluctant among us might want to live there.